

### **Abstract**

The present invention relates to a device for realizing beam-forming in CDMA mobile telecommunication system by employing smart antenna technique and method thereof, which forms multiple fixed beams in a sector, and uses multiple fixed beams to form the traffic channel with narrow beams and the common channel with sector beams simultaneously in the same smart antenna system, and overcomes the problem of inconsistency of phases of respective channels due to the variations of time and temperature without complicated correction technique, thereby improving the capacity and performance of CDMA system with multiple antennas. It solves the problem that the fixed beams in some area correlate with and counteract one another or are greatly reduced due to the correlating addition of the space vectors of each fixed beam when the multiple antenna CDMA system transmits the common channels, and makes the strength of the pilot channel and the traffic channel in corresponding proportion in the coverage area, and improves the signal to noise ratio of receiving signals by the mobile station. By adding an optical transceiver system between the base band and the radio frequency TRX, the base band part can support more sectors. The radio frequency part is very close to the antennas, therefore the power consumption is reduced.